



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,055	07/31/2003	Shahriar Ahmed	42P10970C	3607

7590 08/23/2005

Michael A. Bernadicou  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 Willshire Boulevard  
Seventh Floor, CA 90025

EXAMINER

IM, JUNGHWAM

ART UNIT PAPER NUMBER

2811

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/633,055

Applicant(s)

AHMED ET AL.

PM

Examiner

Junghwa M. Im

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13, 17-22 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 13, 17-22 and 27-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02/22/05
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites a limitation of “... the dielectric layer includes an emitter cut...” Note that an emitter cut is an extension of the emitter, therefore, it is not dielectric.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13, 17-20, 22 and 27-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Akbar et al. (U.S. Pat. No. 4957875), hereinafter Akbar.

Regarding claim 13, Fig. 8 of Akbar shows a bipolar junction transistor comprising:

in a substrate 32, a first isolation structure 36 spaced apart from a second isolation structure 38;

Art Unit: 2811

an emitter stack 16 disposed above the substrate and between the first isolation structure and the second isolation structure; and

a recess (a portion between the regions 17, 18) disposed immediately adjacent to the emitter stack and disposed between the emitter stack and the first isolation structure, wherein the recess exposes a collector tap 26, wherein the emitter stack and the recess share a boundary.

Regarding claim 17, Fig. 8 of Akbar shows a buried layer 34 in the substrate between the first isolation structure and the second isolation structure.

Regarding claim 18, Fig. 8 of Akbar shows a bipolar junction transistor further including:  
in a substrate, an epitaxial base layer 14 disposed below the emitter stack;  
a collector structure 12 disposed in the substrate below the emitter stack; and  
an intrinsic base structure 22 disposed between the emitter stack and the collector structure.

Regarding claim 19, insofar as understood, Fig. 8 of Akbar shows a bipolar junction transistor further including:

in the substrate, an epitaxial base layer 14 disposed below the emitter stack;  
a collector structure 12 disposed in the substrate below the emitter stack; and  
a dielectric layer 17 disposed above the substrate and below the emitter stack, wherein the dielectric layer disposed above the collector structure; and  
an intrinsic base structure 22 disposed between the emitter stack and the collector structure.

Note that "epitaxial" is a process designation, and would not carry patentable weight in this claim drawn to a product. See *In re Thorp*, 227 USPQ 964 (Fed. Cir. 1985).

Art Unit: 2811

Regarding claim 20, Fig. 8 of Akbar shows a collector tap 26 is N type.

Regarding claim 22, Fig. 8 of Akbar shows the BJT is selected from a monojunction BJT device and a heterojunction BJT device.

Regarding claim 27, Fig. 8 of Akbar shows the collector tap 127 is self-aligned with the emitter stack.

Also, note that "self-aligned" is a process designation and would thus not carry patentable weight in this claim drawn to a product. See *In re Thorp*, 227 USPQ 964 (Fed. Cir. 1985).

Regarding claim 28, Fig. 8 of Akbar shows the bipolar junction transistor is an NPN transistor, and the collector tap is N type.

Regarding claim 29, Akbar discloses the bipolar junction transistor is an PNP transistor, and the collector tap is P type (col. 3, lines 24-25).

Regarding claim 30, Fig. 8 of Akbar shows the collector tap has no doping that is different from the substrate.

Regarding claim 31, Fig. 8 of Akbar shows the recess is a contact corridor.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akbar in view of Suzuki (U.S. Pat. No. 6476452).

Art Unit: 2811

Regarding claim 21, Fig. 8 of Akbar shows substantially the entire claimed structure except that the substrate includes a BiCMOS structure. Figure 1 of Suzuki shows a bipolar junction transistor, wherein the substrate includes a BiCMOS structure (structure with 130, 128).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Suzuki into the device of Akbar in order to have a BiCMOS structure in order to accommodate the design specification.

#### *Response to Arguments*

Applicant's arguments with respect to pending claims have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Stephen Loke can be reached on (571) 272-1657. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2811

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jmi

Signature  
Primary Examiner

*Steven Loh*